

First Joint Meeting Brazil Italy of Mathematics Special Session: Probability and Statistical Mechanics

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Title: Local equilibria and spanning forests or metastability revisited through signal processing ideas

Speaker: Alexandre Gaudillièrè (Université d'Aix-Marseille)

Abstract: We extend classical pyramidal algorithms of signal processing on the torus to the case of generic weighted graphs. This is done by making a connection with “local equilibria” appearing in Diaconis and Fill’s intertwining relation. This connection actually provides a way to identify local equilibria of generic Markov chains, and to described the associated metastable phenomena, by starting from the adaptation, through random spanning forests, of the classical subsampling procedure of signal processing. This is work in collaboration with Luca Avena, Fabienne Castell and Clothilde Mélot.